

ABSTRACT OF THE DISCLOSURE

A digital magnetic recording/reproducing apparatus includes an LVA (List Viterbi Algorithm) detector which produces first to nth best sequences ($n > 1$) of a decoded
5 result, and replaces a likelihood ratio and a path memory of the ith best sequence ($i=2, 3, \dots, n$) with those of the $(2i-1)$ th best sequence when contents of path memories of the $(i-1)$ th and ith best sequences are equal to each other and an absolute value of a difference between
10 likelihood ratios of the $(i-1)$ th and $(2i-1)$ th best sequences is smaller than a decision threshold. Alternatively, the LVA detector initializes a likelihood ratio of the ith best sequence to be a likelihood ratio of the $(i-1)$ th best sequence with a constant difference
15 value added thereto when contents of path memories of the $(i-1)$ th and ith best sequences are equal to each other.